



ENDANGERED SPECIES TECHNICAL BULLETIN

Department of the Interior • U.S. Fish and Wildlife Service • Endangered Species Program, Washington, D.C. 20240

A Word About The TECHNICAL BULLETIN

With this issue of the ENDANGERED SPECIES TECHNICAL BULLETIN, the Fish and Wildlife Service inaugurates an information service for all agencies and organizations—Federal, State, and private—cooperating in the Endangered Species Program. The primary objective of the BULLETIN is to foster communication among professionals in the field and to help us all do a better job.

We feel this monthly publication is needed at this time because the Program is fully operable and moving full speed ahead. More and more people are becoming involved, especially at the State level. The act covers every animal and plant species, subspecies, and population in the world needing protection. There are approximately 1.4 million full species of animals and 600,000 full species of plants in the world. Various authorities calculate as many as 10% of them—some 200,000—may need to be listed as Endangered or Threatened. When one counts in subspecies, not to mention individual populations, the total could increase to three to five times that number. Our current box score of species listings (see page 2) shows we are making progress, but that the task is enormous—we have only just begun.

In the first issues of the BULLETIN, we will be bringing you information on current and prospective Program actions that are required under the 17 sections of the law. Many of these actions are complicated, so we feel it will be important to clarify the technical details for you. Later we will be exploring the work of species recovery teams, the determination of critical habitats, the development of interagency and State cooperative agreements, law enforcement efforts, and programs of land acquisition and research that are designed to return endangered or threatened species to a viable condition.

As future developments warrant, we plan to delve into certain biological, legal, and other questions affecting the Program. We also plan to present the views of our readers—how you are attacking problems in the field—and to pass along to others your hard-earned lessons. Our efforts—plus yours—are what are needed to get the job done.

Keith M. Schreiner
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First U.S. Plants Proposed as Endangered

In excess of 1,700 plants located in 46 States have been proposed for listing as Endangered (F.R. 6/16/76). They are the first native plants recommended for this status. Seventy-four foreign plant species were proposed as Endangered last year (F.R. 9/26/75).

The newly proposed native plants represent about 8% of the seed plants and ferns in the nation and cover more than 100 plant families. Over half of the plants occur in Hawaii and considerable numbers are in California, Texas, and Florida.

Under the 1973 Endangered Species Act, the Smithsonian Institution was directed to review the status of plants and, in January

1975, it issued a report designating 3,187 plants as likely candidates for either Endangered or Threatened status. This report was accepted by the Service as a petition and published as a Notice of Review (F.R. 7/1/75). The current proposal results from a Service review of these candidates and public comments about them. Comments on this latest proposal must be submitted to the Service by August 16, 1976.

The Service has proposed regulations (F.R. 6/7/76) to cover the interstate and foreign commerce, sale or offer for sale, and import and export, of endangered or threatened plants, their seeds, roots, and parts. Intrastate commerce would not be regulated. Comments due by August 9, 1976.

Eleven States Sign Agreements with FWS

Eleven States signed cooperative agreements with the U.S. Fish and Wildlife Service June 23, ushering in a new era in the conservation of endangered animals and plants.

The States are Arkansas, California, Colorado, Delaware, Florida, Michigan, New Jersey, New York, New Mexico, South Carolina, and Washington. They are eligible to share in about \$2 million of Federal aid to assist in the recovery of endangered or threatened species.

The agreements will bring a great many more conservation officers and wildlife biologists into the endangered species program. The Service has only some 180 law enforcement officers in the field, and only a few hundred field biologists. The 55 State and territorial conservation agencies, by contrast, have well over 5,000 experienced conservation officers and several thousand professional wildlife biologists trained in the management of wild flora and fauna.

Moreover, the States and territories possess millions of acres of land providing habitat for many of the 170 endangered American species of animals. Better habitat management for these species is the goal of the cooperative program.

Working out the 11 new agreements has been a lengthy process. Legal authority for State wildlife agencies had to be researched in State capitals, and, in some cases, new legislation had to be enacted to meet the requirements of the Federal law.

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159 Animals Added To Endangered Category

Removal of 159 more endangered taxa of animals (164 species, subspecies, and populations) from interstate commerce and import and export becomes effective July 14. The animals—mainly of foreign origin—were added to the Endangered list June 14 (F.R. 6/14/76).

The listing came about through a petition by the Fund For Animals, which had requested that all 216 taxa of animals and plants in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora be listed. The Service has deferred final action on the remaining 57 taxa to allow more time for review of public comments and biological data about them. The listing was proposed last September.

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States (continued from page 1)

In addition to financial assistance, the agreements establish a cooperative law enforcement effort between Federal and State officers. This makes possible joint investigations, apprehensions, and prosecutions of violators of either State or Federal statutes. The agreements are to be renewed annually.

Joint permits will be issued for the taking of endangered animals in the States. States have agreed to refuse permits to applicants who do not have Federal permits. The same emergency provisions for taking an endangered animal that apply to Federal wildlife officials will now apply to State officials when under a cooperative agreement. Emergency situations include aiding a sick, injured, or orphaned animal, disposal of dead animals; salvage of dead specimens; removal of animals threatening human safety; and the self-defense of an official, or the lives of others.

Negotiations with other States are continuing and many more signings are expected in coming months.

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BOX SCORE OF SPECIES LISTINGS

Species	Endangered			Threatened		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals-----	35	215	250	1	3	4
Birds-----	65	144	209	1		1
Reptiles-----	8	46	54			
Amphibians-----	4	9	13			
Fishes-----	30	10	40	4		4
Snails-----		1	1			
Clams-----	22	2	24			
Crustaceans-----						
Insects-----	6		6	2		2
Plants-----						
Totals-----	170	427	597	8	3	11

Numbers of species currently proposed: 72 animals; approx. 1850 plants

Number of Recovery Teams appointed: 55

Additional Recovery Teams to be appointed this year: 2

Number of Cooperative Agreements signed with States: 11

Critical Habitat Determinations

The snail darter (*Percina tanasi*) is the first animal to have its habitat requirements defined and officially determined as "critical" to its survival (F.R. 4/1/76). A similar habitat determination is being prepared for the Mississippi sandhill crane (*Grus Canadensis pulla*).

The law obliges all Federal agencies to insure that actions authorized, funded, or carried out by them do not result in the destruction or adverse modification of habitat that has been determined as critical to an endangered or threatened species.

In the case of the Mississippi sandhill crane, which has a population of about 40, 100,000 acres of privately-owned land in Jackson County, Miss., were listed as critical to the bird in June 1975 (F.R. 6/30/75) under emergency provisions of the law. The action was taken because of an imminent threat created by construction of Interstate Highway 10 in the county, a Federal Highway Administration project.

Following detailed studies, approximately 25,000 acres are now regarded as critical for the crane's survival. The Service is in the process of preparing a final rulemaking on this acreage.

Impoundment of water behind the Tennessee Valley Authority's Tellico Dam on the Little Tennessee River poses a threat to the snail darter. The Service has determined that the darter's only present known habitat—clean gravel shoals with swift, cool, low turbidity water along a 17-mile stretch in Loudon County, Tenn.—would be obliterated.

Private citizens brought suit to stop work on the partially completed dam. A Federal court has ruled in favor of continuing construction on grounds that a large amount of capital has been invested in the project and the fact that the darter was discovered after construction started. The case is under appeal and construction is proceeding.

In the interim, several snail darter speci-
mens have been transplanted to the Hiwas-

see River, a tributary of the Tennessee River, and they appear to be doing well. But biologists believe it will take several years before they are certain that the transplanted population will survive and reproduce.

Animals (continued from page 1)

The animals placed in Endangered status include 61 mammals, 38 birds, 2 fish, 24 mollusks, 28 reptiles, and 6 amphibians. The 22 animals native to the United States are all mollusks. The other animals include crocodiles, pythons, giant salamanders, various parrots and macaws, numerous monkeys, spotted cats, and Asian elephants. The main impact of the listing will be felt in the zoo, circus, and animal dealer marketplace.

However, all of the species may in certain cases be imported or moved in interstate commerce for scientific research, propagation, or enhancement of the survival of the species. Permits for these activities may be applied for from the Director, U.S. Fish and Wildlife Service, Washington, D.C., 20240.

Falcons (continued from page 4)

The exact locations of the release sites for this year's program are not being disclosed. In 1974, a well-publicized release in New York state ended with the birds being shot.

The peregrine falcon was extirpated by DDT east of the Mississippi. Today, use of DDT in the U.S.A. is severely restricted, and scientists hope the birds can live a healthy life in the wild.

Continued use of DDT in Latin America, where some peregrines spend the winter, still poses a threat. The restocked birds all remained in the U.S. this past winter, a hopeful sign. However, even these birds may suffer from DDT effects in the long run, if their prey includes birds which themselves winter in high DDT areas of Latin America.

Now that the operational details of hacking these birds back into the wild have been tested, the experimental program is scheduled to pick up steam next year. Dr. Cade hopes for a breeding season next spring that will produce on the order of 100 falcons. Most will be hacked back into the wild.

PROGRAM ACTIONS IN BRIEF . . .

Final Rulemakings

BUTTERFLIES: Six species of California butterflies have been listed as Endangered (F.R. 6/1/76) and two species in Florida have been listed as Threatened (F.R. 4/28/76). They are the first insects to be placed on the lists. The Service extended coverage to the insect world because insects often are good indicators of an ecosystem's state of health. Insects are essential for the pollination of plants, and they are the base of most terrestrial food webs. Economic and residential development—not butterfly collectors—are the primary reasons for the plight of the listed species. The taking of adult specimens is not considered a serious problem, because most adults lay eggs shortly after emerging from the pupal stage and live no longer than a month. The listed species in California are the San Bruno Elf, Lotus Blue, Mission Blue, Smith's Blue, El Segundo Blue, and Lange's Metamark. The listed species in Florida are the Schaus Swallowtail and the Bahama Swallowtail, both residents of the Florida Keys.

MEXICAN WOLF: The smallest subspecies of timber wolf in North America, the Mexican wolf (*Canis lupus baileyi*), has been listed as Endangered (F.R. 4/28/76). There are now only about 200 of these wolves, most of them living in the high country of northern Mexico. At one time, the animals also ranged over the southwestern United States, but the last regular sightings in that region were reported in the early 1950s. The wolf's decline is attributed in part to the effects of increased agriculture and road building on the animal's habitat and food supply. Many wolves were killed in a Mexican-U.S. predator control program under the auspices of the World Health Organization in the late 1940s. Although the wolf at present has official protection in Mexico, the authorities find it difficult to enforce the law.

GRAY BAT: A recent listing of the gray bat (*Myotis grisescens*) as Endangered (F.R. 4/28/76) will enable authorities to close off some cave habitats to spelunkers. The tiny mammals range over 11 southern States, but are primarily concentrated in five caves in northern Alabama. Large concentrations of the bats are required to maintain the temperature needed for the growth of embryos and young while they are hibernating during the winter. If they are disturbed by human activity, the critical temperature balance is lost and the metabolism of the bats is adversely affected, causing their numbers to decline.

Proposed Rulemakings

SEA TURTLES: To enhance the protection of three endangered species of sea turtles, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service have jointly proposed treating three other sea turtles as Threatened because of their similarity of appearance (F.R. 6/16/76). The new rulemaking concerns the green turtle (*Chelonia mydas*), loggerhead (*Caretta caretta*), and the Pacific ridley (*Lepidochelys olivacea*) which closely resemble the Endangered hawksbill, leatherback, and Atlantic ridley. Law enforcement officers have great difficulty in distinguishing shell, meat, oil, skin, and other products among the two sets of sea turtles, making it virtually impossible to prove in court that a given product came from an endangered species. Currently, there is large scale trafficking in turtle products and a serious problem exists in protecting the endangered turtles. If the proposed ruling is adopted, the three turtles would fall under virtually the same restrictions on taking, import, export, transportation, and sale as their endangered counterparts.

SNAILS: Fifteen species of snails have been proposed for listing as Endangered and 17 as Threatened (F.R. 4/28/76). The 32 species of land and freshwater snails are located in 14 States. Those proposed as Endangered are restricted to a very small area or occur in such small numbers as to be in imminent danger of extinction. The Threatened proposals are for species that have a wider range or have sufficient numbers so they face a less grave problem of survival. Scientists estimate that as many as 400 (20%) of the inland, non-marine snail species in the United States ultimately may prove to be threatened or endangered. Snails are particularly valuable to ecologists, because the various species serve as accurate gauges of the overall health of particular ecosystems, such as rivers, deserts, prairies, or forests. Land snails are particularly important in the life cycles of many birds, and freshwater snails are a significant factor in aquatic food chains. They also are of interest scientifically. For example, snails and other mollusks rarely get cancer. Researchers have already isolated a

substance, mercenene, which is thought to provide the snails' metabolic and biological defense against some types of cancer. Mercenene has inhibited the growth of tumors in mice and is being tested as a potential therapy for human cancer. Snails also are used to produce a wide variety of poisons, antibiotics, tranquilizers, antispasmodics, and antiseptic chemicals. The 32 snail species proposed for listing are native to Arkansas, California, Florida, Iowa, Nevada, New Mexico, New York, North Carolina, Oklahoma, Tennessee, Texas, Utah, Virginia, and West Virginia.

YELLOW-SHOULDERED BLACKBIRD: A native of Puerto Rico and Mona Island, the yellow-shouldered blackbird (*Agelaius xanthomus*) has been proposed for listing as Endangered (F.R. 6/10/76). The species now numbers only about 2,500. Economic development of southwestern Puerto Rico is rapidly altering the bird's habitat. In addition, the species is suffering from the effects of disease and predation. Fowl pox currently infects about 19% of the adult population. The shiny cowbird (*Molothrus bonariensis*), which invaded the island in 1955, lays its own eggs in the blackbird's nest and sometimes punctures the host's eggs. Rats and mongooses also prey on the blackbird's nests. The annual mortality of adult birds is about 31%, while annual production is only about 10%. At this rate, the blackbird may be extirpated over the next five years. The proposal includes the delineation of critical habitat covering all of Mona Island and areas of southwestern Puerto Rico.

PRIMATES: As part of the growing international effort to save the world's primates, the Service has proposed listing 27 primate species as either Endangered or Threatened (F.R. 4/19/76).

Ten of these species are native to Asia. Six are found in India, Sri Lanka (Ceylon), Malaysia, Taiwan, and Japan, where their forest habitat has been seriously reduced by the expansion of agriculture and forest industries. In addition, their numbers have decreased because of being hunted for food and collected for sale as pets or as research animals. The other four Asian species live in Indochina, where the natural habitat has been damaged severely by the effects of widespread military activities.

Eleven of the species proposed for listing are native to Africa. In West Africa, logging has damaged the habitat extensively. The numbers of some primates have also been reduced by local hunters searching either for food for themselves or for exotic species that can be sold to the world's zoos. Elsewhere in Africa, certain primate species have been forced to leave their lands because of intensive farming and settlement. Some have been decimated by collectors in search, illegally, of animals to be used for biomedical research.

Six of the species proposed for listing are native to Latin America. Their numbers have been greatly reduced partly by the spread of logging and farming, and partly by the demands of the U.S. pet and zoo trade. The young of two species, the cotton top marmoset (*Saguinus oedipus*) and the squirrel monkey (*Saimiri oerstedii*) are very popular pets.

AMERICAN ALLIGATOR: The Service has proposed transferring about 75% of all American alligators from the Endangered list to the less restrictive Threatened list (F.R. 4/8/76). The change in status would affect approximately 500,000 alligators living throughout Florida and in coastal portions of Georgia, Louisiana (except Vermilion, Cameron, and Calcasieu parishes), South Carolina, and Texas. It would leave classed as Endangered the alligators throughout Mississippi, Alabama, Oklahoma, Arkansas, and North Carolina, and in the inland areas of South Carolina, Georgia, Louisiana, and Texas. In addition, it would recognize the unique status of Vermilion, Cameron, and Calcasieu parishes, where the alligator populations are neither threatened nor endangered but live close to areas where there are endangered populations in the state. This is intended to help reduce the illegal traffic in hides.

Reference Note

All Service Notices, proposed, and final rulemakings are published in the *Federal Register* in full detail. The parenthetical references, i.e. (FR 6/10/76) contained in the BULLETIN list the month, day, and year the rulemaking appeared in the *Register* for readers wishing more information.

RULEMAKING: KEY STEPS IN THE LISTING, DELISTING PROCESS

The listing, delisting, and reclassifying of endangered or threatened species is a lengthy process that may start with a petition or a request to the Service for action. Or the process may be begun by internal initiative of the Service.

All petitions or requests from individuals or organizations must be accompanied by adequate supporting evidence or data. Once received by the Service, the evidence is reviewed by an *ad hoc* panel of professional biologists to determine a course of action. The panel may decide 1) further review of the species' status is warranted; 2) a Proposed Rulemaking should be published immediately in the *Federal Register*; 3) the evidence does not support the petition.

The Service may publish a "Notice of Intent to Review the Status of a Species" when circumstances indicate, although this step is not required by law. In the case of *resident* species the state governor must be given a 90-day comment period.

Following the receipt of comments, the Service makes a decision either to drop the species from further consideration or to develop a Proposed Rulemaking. This takes from 30 to 90 days and involves the acquisition of the Service's own evidence that a species is endangered, threatened, or neither. In some cases the notice of review is omitted and the process begins with a Proposed Rulemaking.

Upon publication of the Proposed Rulemaking, the public is given 60 days to respond (governors get 90 days). When all

comments are in, the Service must take the following actions:

- Review and summarize all comments.
- Make a decision on what the final action should be.
- Finalize a biological status report supporting that action.
- Finalize a document satisfying the requirements of the National Environmental Policy Act.
- Prepare a Final Rulemaking, if this is the decision.
- Publish a negative decision in the *Federal Register*, if this is the final action.

During this 60-90 day period, anyone may request a public hearing on the Proposed Rulemaking. The Secretary of the Interior may either grant or deny the hearing. Either action must be published in the *Federal Register*.

In cases concerning species under the joint jurisdiction of the National Marine Fisheries Service, the Secretaries of Interior and Commerce must mutually agree on any proposed listing or change in status for a species.

The last action in the listing process is publication of the Final Rulemaking. This document gives the common and scientific names of the species concerned, states whether they are "threatened" or "endangered," the portion of their ranges in which they are listed, specifies any special regulations applying to a threatened species, and summarizes the supporting data for action.

FALCON RECOVERY EFFORTS ENTER SECOND YEAR

Twenty-eight American peregrine falcons (*Falco peregrinus*) raised in captivity at Cornell University's Ornithology Laboratory have been released in Colorado and five eastern states over the past several weeks.

The experimental project under the direction of Dr. Tom Cade is designed to release upwards of 100 to 200 of these birds a year, until they have reoccupied their vacant niche in the raptor world.

The peregrine falcon was extirpated east of the Mississippi River in the early 1960's. Some believe the bird is no longer to be found nesting from the east slope of the Rockies to the Atlantic. It is this uncertainty which prompted Dr. Cade and others to begin a stocking program in Colorado. A breeding facility opened in Fort Collins, Colo., during the past year.

In the current effort three birds were released in New York; six in New Hampshire; four in Pennsylvania; four in New Jersey; seven in Maryland, and four in Colorado.

Last year 16 birds were released in the east. Twelve survived. Losses were: one to electrocution, two to great horned owls, and the fourth was recaptured and returned to the breeding facility.

Last year's birds have adapted well. They were hacked and now can survive on their own. Hacking is a process whereby the young birds are brought into the wild one week before fledging. They are hand-fed at the hacking station and then gradually weaned to taking birds on their own for food.

Food is plentiful in the areas where they were released. The best news for scientists watching the birds was the fact that they did not migrate last spring when other falcons got the urge. They have shown a tendency to wander from west to east, though. When autumn ended, the birds from New York and Pennsylvania headed toward and wintered along the east coast amid the wintering waterfowl.

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Comments Invited

The Service seeks written comments from interested parties on all Notices and Proposed Rulemakings. They should be addressed to: Director (FWS/LE), U.S. Fish and Wildlife Service, P.O. Box 19183, Washington, D.C. 20240.

We Need Your Help

To make this your BULLETIN, as well as ours, we need your help. Please send the Editor any comments for improving the format, ideas for articles, photographs, and reports on your latest research and management activities.



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